

Amendments to the Claims:

Please cancel claims 1-73 and add new claims 74-109. This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1-73 (canceled)

1 74 (new): A probe for laser desorption/ionization mass spectrometry, wherein
2 the probe comprises at least one sample presenting surface and a moiety that binds to biotin
3 immobilized by chemical bonding to the sample presenting surface.

1 75 (new): The probe of claim 74, wherein the moiety binds biotin with an
2 affinity constant of $K_a = 10^{15} \text{ M}^{-1}$.

1 76 (new): The probe of claim 74, wherein the moiety on the sample presenting
2 surface is bound to the biotin group of at least one biotinylated protein.

1 77 (new): The probe of claim 76, wherein the probe further comprises a matrix.

1 78 (new): The probe of claim 74, wherein the sample presenting surface
2 comprises two or more moieties that bind to biotin arranged in a predetermined array.

1 79 (new): The probe of claim 74, wherein the moiety that binds to biotin is
2 selected from the group consisting of streptavidin and avidin.

1 80 (new): The probe of claim 74, wherein the moiety is covalently bonded to the
2 sample presenting surface.

1 81 (new): A method comprising the steps of:

- 2 a) providing a probe comprising at least one sample presenting surface and a
3 moiety that binds to biotin immobilized by chemical bonding to the sample presenting surface;
4 b) contacting the probe with at least one biotinylated protein under conditions
5 allowing the biotin group to bind to the moiety that binds to biotin; and
6 c) performing laser desorption/ionization mass spectrometry on the proteins
7 bound on the surface of the probe.

1 82 (new): The method of claim 81, further comprising after step b) the step of:
2 washing to remove unbound molecules from the probe.

1 83 (new): The method of claim 81, wherein the moiety binds biotin with an
2 affinity constant of $K_a = 10^{15} \text{ M}^{-1}$.

1 84 (new): The method of claim 81, wherein the probe comprises two or more
2 moieties that bind to biotin arranged in a predetermined array.

1 85 (new): The method of any one of claims 81-84, wherein the moiety is
2 covalently bonded to the sample presenting surface.

1 86 (new): The method of any one of claims 81-84, further comprising the step of
2 applying a matrix after allowing the biotin group to bind to the moiety that binds to biotin.

1 87 (new): The method of any one of claims 81 or 82, wherein the moiety that
2 binds to biotin is selected from the group consisting of streptavidin and avidin.

1 88 (new): The method of claim 87, wherein the moiety is covalently bonded to
2 the sample presenting surface.

1 89 (new): The method of claim 87, further comprising the step of applying a
2 matrix after allowing the biotin group to bind to the moiety that binds to biotin.

1 90 (new): A mass spectrometry apparatus comprising:

- 2 a) a probe comprising at least one sample presenting surface and a moiety that
3 binds to biotin immobilized by chemical bonding to the sample presenting surface;
4 b) an energy source that directs laser energy to the sample presenting surface for
5 desorbing and ionizing a biotinylated protein captured by the moiety; and
6 c) a detector that detects the desorbed, ionized biotinylated protein.

1 91 (new): The apparatus of claim 90, further comprising:

- 2 d) a spectrometer tube into which ionized biotinylated protein is accelerated; and
3 e) means for applying an accelerating electrical potential to the desorbed, ionized
4 protein; wherein the mass spectrometer is a time-of-flight mass spectrometer.

1 92 (new): The apparatus of claim 91, further comprising:

- 2 f) vacuum means for applying a vacuum to the interior of the tube.

1 93 (new): The apparatus of claim 90, wherein the detector comprises an electron
2 multiplier.

1 94 (new): The apparatus of claim 90, wherein the moiety binds biotin with an
2 affinity constant of $K_a = 10^{15} \text{ M}^{-1}$.

1 95 (new): The apparatus of claim 90, wherein the moiety on the probe is bound
2 to the biotin group of at least one biotinylated protein.

1 96 (new): The apparatus of claim 95, wherein the probe further comprises a
2 matrix.

1 97 (new): The apparatus of claim 90, wherein the probe comprises two or more
2 moieties that bind to biotin arranged in a predetermined array.

1 98 (new): The apparatus of claim 90, wherein the moiety that binds to biotin is
2 selected from the group consisting of streptavidin and avidin.

1 99 (new): The apparatus of claim 91, wherein the moiety that binds to biotin is
2 selected from the group consisting of streptavidin and avidin.

1 100 (new): The apparatus of claim 92, wherein the moiety that binds to biotin is
2 selected from the group consisting of streptavidin and avidin.

1 101 (new): The apparatus of claim 93, wherein the moiety that binds to biotin is
2 selected from the group consisting of streptavidin and avidin.

1 102 (new): The apparatus of claim 90, wherein the moiety is covalently bonded
2 to the sample presenting surface.

1 103 (new): The apparatus of claim 95, wherein the moiety is covalently bonded
2 to the sample presenting surface.

1 104 (new): The apparatus of claim 96, wherein the moiety is covalently bonded
2 to the sample presenting surface.

1 105 (new): The apparatus of claim 98, wherein the moiety is covalently bonded
2 to the sample presenting surface.

1 106 (new): The apparatus of claim 99, wherein the moiety is covalently bonded
2 to the sample presenting surface.

1 107 (new): The apparatus of claim 100, wherein the moiety is covalently bonded
2 to the sample presenting surface.

1 108 (new): The apparatus of claim 101, wherein the moiety is covalently bonded
2 to the sample presenting surface.

1 109 (new): The apparatus of claim 90, wherein the energy source is energy from
2 a nitrogen laser or an Nd-YAG laser.